MATERIAL SAFETY DATA SHEET

Manufacturer: Strem Chemicals, Inc
7 Mulliken Way
Newburyport, MA 01950-4098 U.S.A.
www.strem.com

Strem Customer Service (978) 499-1600
CHEMTREC (Emergency Only) (800) 424-9300
Poison Center (800) 562-8236

Section 1: Product Identification
Chemical Name: Tri-t-butoxysilanol (99.999%-Si) PURATREM
Product Number: 14-7015
CAS Registry Number: 18166-43-3
Formula: [(CH3)3CO]3SiOH
EINECS Number: none
Chemical Family: organosilicon compound
Synonym: Tris(tert-butoxy)silanol

Section 2: Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Percent</th>
<th>ACGIH (TWA)</th>
<th>OSHA (PEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title compound</td>
<td>18166-43-3</td>
<td>100%</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Emergency Overview: Irritating to skin, eyes and respiratory tract.
Primary Routes of Exposure: Ingestion, inhalation, eyes
Eye Contact: Causes slight to mild irritation of the eyes.
Skin Contact: Causes slight to mild irritation of the skin.
Inhalation: Irritating to the nose, mucous membranes and respiratory tract.
Ingestion: No information available on the physiological effects of ingestion. May be harmful if swallowed.
Acute Health Affects: Irritating to skin, eyes and respiratory tract.
Chronic Health Affects: No information on long-term chronic effects. Contact with moisture, as resulting from human contact, will produce n-butanol which shows reproductive effects in animal studies.
NTP: No
IARC: No
OSHA: No

SECTION 4: First Aid Measures

Eye Exposure: Immediately flush the eyes with copious amounts of water for at least 10-15 minutes. A victim may need assistance in keeping their eye lids open. Get immediate medical attention.
Skin Exposure: Wash the affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.
Inhalation: Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.
Ingestion: Seek medical attention immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.
SECTION 5: Fire Fighting Measures
Flash Point: no data
Autoignition Temperature: none
Explosion Limits: none
Extinguishing Medium: carbon dioxide, dry powder or foam
Special Fire Fighting Procedures: If this product is involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.
Hazardous Combustion and Decomposition Products: If involved in a fire this material may emit irritating fumes.
Unusual Fire or Explosion Hazards: No unusual fire or explosion hazards.

SECTION 6: Accidental Release Measures
Spill and Leak Procedures: Small spills can be mixed with vermiculite, sodium carbonate or other suitable non-combustible adsorbent and swept up.

SECTION 7: Handling and Storage
Handling and Storage: Store in a tightly sealed container under an inert atmosphere of nitrogen or argon. Keep in a cool, dry, well-ventilated area.

SECTION 8: Exposure Controls and Personal Protection
Eye Protection: Always wear approved safety glasses when handling a chemical substance in the laboratory.
Skin Protection: Wear protective clothing and gloves.
Ventilation: Handle the material in an efficient fume hood.
Respirator: If ventilation is not available a respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 1910.134.
Ventilation: Handle the material in an efficient fume hood.
Additional Protection: No additional protection required.

SECTION 9: Physical and Chemical Properties
Color and Form: colorless liq.
Molecular Weight: 264.43
Melting Point: 63-65°C
Boiling Point: 205-210°C
Vapor Pressure: 0.4mm @ 55°C
Specific Gravity: 0.89g/cc3
Odor: none
Solubility in Water: insoluble

SECTION 10: Stability and Reactivity
Stability: moisture sensitive
Hazardous Polymerization: no hazardous polymerization
Conditions to Avoid: prolonged exposure to moisture
Incompatibility: strong oxidizing agents, strong acids and halogens
Decomposition Products: carbon dioxide, carbon monoxide, organic fumes, butanol and silicon dioxide.
**SECTION 11: Toxicological Information**

<table>
<thead>
<tr>
<th>Carcinogenic Effects:</th>
<th>no data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mutagenic Effects:</td>
<td>no data</td>
</tr>
<tr>
<td>Tetratogenic Effects:</td>
<td>no data</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological Information**

Ecological Information: No information available.

**SECTION 13: Disposal Considerations**

Disposal: Dispose of according to local, state and federal regulations.

**SECTION 14: Transportation**

<table>
<thead>
<tr>
<th>Shipping Name (CFR):</th>
<th>Non-hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class (CFR):</td>
<td>NA</td>
</tr>
<tr>
<td>Additional Hazard Class (CFR):</td>
<td>NA</td>
</tr>
<tr>
<td>Packaging Group (CFR):</td>
<td>NA</td>
</tr>
<tr>
<td>UN ID Number (CFR):</td>
<td>NA</td>
</tr>
<tr>
<td>Shipping Name (IATA):</td>
<td>Non-hazardous</td>
</tr>
<tr>
<td>Hazard Class (IATA):</td>
<td>NA</td>
</tr>
<tr>
<td>Additional Hazard Class (IATA):</td>
<td>NA</td>
</tr>
<tr>
<td>Packaging Group (IATA):</td>
<td>NA</td>
</tr>
<tr>
<td>UN ID Number (IATA):</td>
<td>NA</td>
</tr>
</tbody>
</table>

**SECTION 15: Regulatory Information**

| TSCA: | Not listed in the TSCA inventory |
| SARA (Title 313): | Not reportable under SARA 313 |
| SecondIngredient: | none |
| ThirdIngredient: | none |

**SECTION 16: Other Information**

The information herein is believed to be accurate and reliable as of the date compiled. However, Strem Chemicals, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information.

Preparation Date: 12/12/2012

Revision Date: 12/12/2012